

PERFORMANCE BENCHMARKING FOR PACIFIC WATER UTILITIES

*'From Vision to Action towards a Sustainable Water Sector in the Pacific'.
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**presented by
Taito Delana, Pacific Water Association**

1. Introduction to Benchmarking

Benchmarking involves ① “...the quantitative measurement of performance against other organisations or self over time (Metric Benchmarking), and ② ...the analysis of a utility’s own business processes and comparison with those of organisations with exemplary performance in those processes (Performance Benchmarking)...and the adaptation of those processes to the utility’s own circumstances, and then implementation.”

The process is not complete without implementation. Implementation is thus vital to any benchmarking exercise, and the will to change practices and to implement changes for the good must be present from the commencement of any benchmarking exercise.

The development and use of benchmarking activity in the past decade has been such that it now embraces most industries. It is used throughout the world and is being adopted by the public as well as the private sector. It is increasingly used as a continuous, routine tool for a variety of purposes including reducing costs, improving efficiency, creating safer working environments, improving customer service and improving product quality.

The water industry has embraced benchmarking recognizing the importance of its application to improve levels of service. Examples include the ADB’s Water Utilities Data Book, World Bank’s Benchmarking Start-Up-Kit and the International Water Association’s ongoing project to establish definitive Performance Indicators for Water Supply Systems.

Water service providers in the Pacific region have been fortunate to have had the opportunity to develop the questionnaire and the benchmarking database with the assistance of ADB, PWA, and SOPAC.

2. Background of the ADB Benchmarking Project

In recognizing the importance of improving performance in the power and the water & sewerage sector, the Asian Development Bank approved a Regional Technical Assistance (RETA) TA No. 5883-REG in year 2000. The objective of the project is to assist water supply and electric power utilities in developing countries in the Pacific to develop appropriate operational, institutional and financial performance evaluation criteria and benchmarks. The RETA was undertaken in co-operation with the Pacific Water Association (PWA) and the Pacific Power Association (PPA).

The finding of the project is produced in a Report by Stephen Ramsey the Consultant for the Benchmarking Project available with the PWA office, Suva.

3. Process/Methodology

The project was undertaken in three phases. In Phase 1, a participatory mini-workshop was held in October 2000 in Suva, Fiji with representatives of a number of water and power utilities in the region to develop relevant criteria and benchmark issues applicable to Pacific water and power utilities. Separate questionnaires for water and power were developed at this meeting. These questionnaires were intended to cover all aspects of the utilities' operations, including institutional, regulatory, operational, management, financial and human resources issues.

Following the mini-workshop, Benchmarking Data Worksheet with Explanatory Notes (included in the Attached Report Sections 3 and 4), covering those areas which were perceived to be of key importance to the wider range of water utilities in the Pacific were further refined and fine-tuned by the Project Consultant, Steven Ramsey.

The water and power programs have developed separately from this early stage. In both cases questionnaires have been distributed to utilities throughout the region. Water utility questionnaires were received from twelve participating utilities within the region and the data collated into a database for further analysis and developed into a draft presentable form for further discussion at a larger-scale workshop in Phase 2 of the project.

During Phase 2 a larger-scale participatory workshop was held for the water utilities, in conjunction with the PWA AGM in Apia, Samoa, in March 2001. As a result of the workshop the questionnaire has been revised into a final version *Benchmarking Data Worksheet with Explanatory Notes* (Sections 3 and 4), covering those areas which are perceived to be of key importance to the wider range of water utilities in the Pacific.

Phase 3 of the RETA involves dissemination of the workshop findings, the agreed performance evaluation criteria as contained in the Benchmarking Data Worksheet, metric benchmarking data received from participating utilities, and outline guidance for the development of action plans for improving the performance of individual utilities.

4. Issues arising

- *Difficulty encountered* – There was a late response on the submission of the questionnaires. This is most likely due to the lack of understanding and interpretation of the questionnaires, relevance of questions, issue of proprietorship, willingness to invest in the program and funding issues.
- *Benefits* – Utilities are able to better understand their performance level and be able to deal with it; information is useful for various stakeholders such as lending institutions; opportunity for cost savings operational efficiency; and the opportunity to share information with benchmarking partners for efficiency gains.

5. Future Plans

It is recognized that the project is an excellent opportunity for similar sized water utilities to gauge their performance with others, and indeed to continuously improve their level of service. PWA is now the focal point for discussion, dissemination and exchange of information, and will encourage and facilitate the development of individual utility action plans to progress with benchmarking.

It is intended that the document be reviewed annually provided of course PWA receives the relevant information consistently.

It is hoped that water utilities will use the experience gained and the information contained in this document as a basis for development of their own action plans to use metric and process benchmarking to identify best practice and to achieve performance improvement and efficiency gains within their own organizations.

6. Fiji Benchmarking Data

Introduction: The Island group consists of over 300 islands. The water supply systems in Fiji come under the responsibility of the PWD. There are a total of eleven separate schemes.

Compiling data that is representative of the country is only possible after these individual systems have collected their data. This has not been an easy exercise for the reason already stated; that is the lack of appreciation of the usefulness of the program. In addition PWD prefers to compile data separately to facilitate

internal benchmarking amongst individual systems. This will produce a more meaningful benchmarking result as it allows an internal benchmarking facility within the country.

For the purpose of the ADB Benchmarking project, data was collected for one of the two largest water supply schemes in the Fiji Islands and that is the Nadi-Lautoka Regional Water Supply Scheme. Although available, data was not readily accessed as they are mostly not in the form required under the questionnaire. Therefore a great deal of time was spent compiling the required information.

7. Results of the ADB Benchmarking

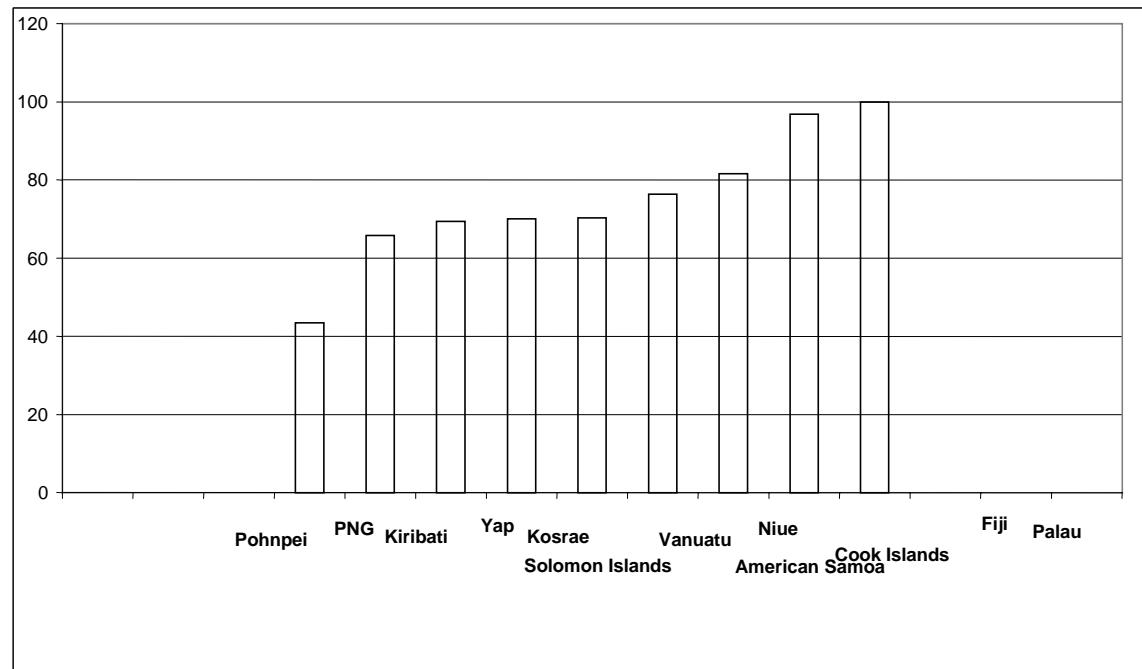
The following are a few examples of the outcome of the ADB Benchmarking project. The full result is presented in the Benchmarking Report prepared by Steven Ramsey and is available at the PWA office, Suva, Fiji.

7.1 Proportion population served (%) – Water

PERFORMANCE INDICATOR CHARTS

GRAPH 1

Proportion population served (%)



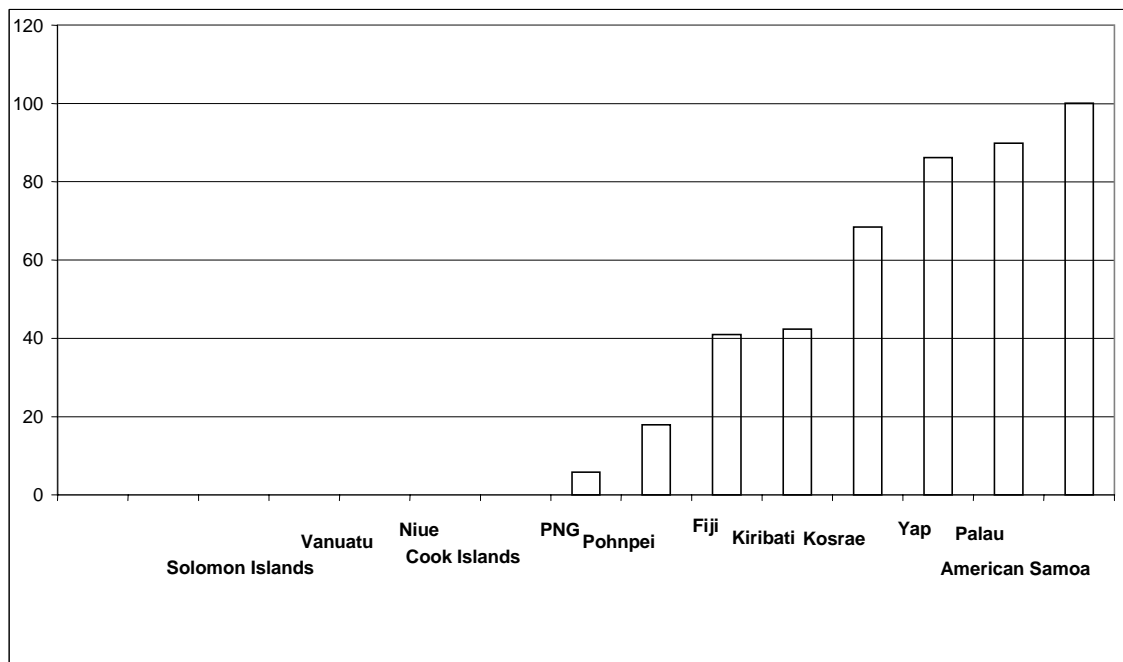
This graph shows that the proportion of population served for water supply in the area of coverage of the utility varies from 40% (Pohnpei) to 100% (American Samoa). Cook Islands, Fiji and Palau all report greater than 100% - quality checking has excluded such values. Utilities with lower values may experience large growth in the future as coverage of the existing population spreads, whilst utilities with near 100% coverage will only experience growth if the population as a whole grows.

7.2 Proportion population served (%) - Wastewater

PERFORMANCE INDICATOR CHARTS

GRAPH 2

Proportion population served (%)



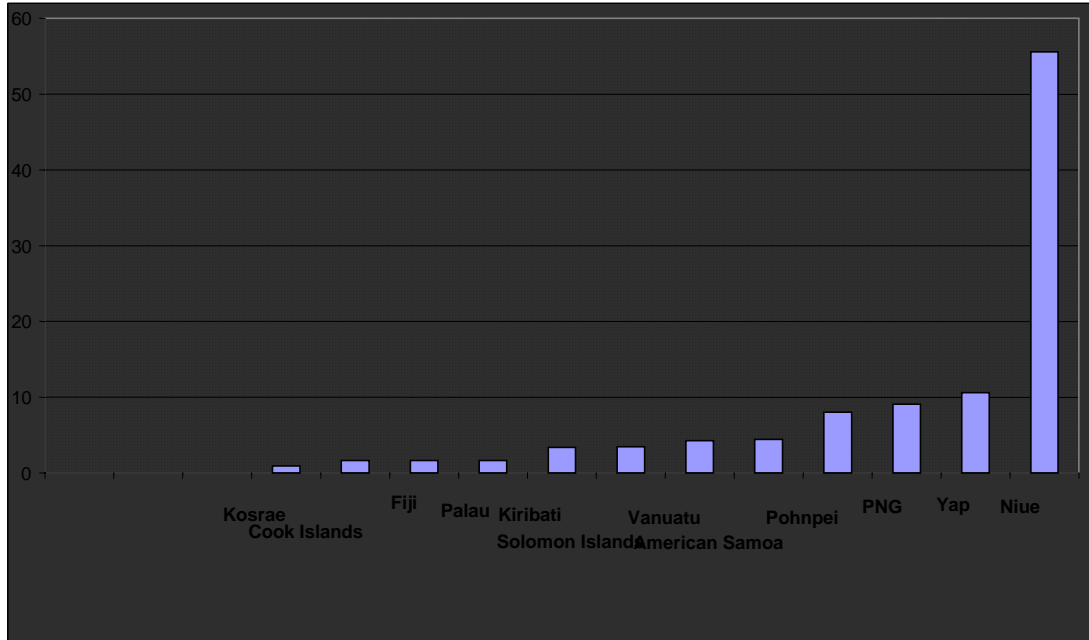
This graph shows that the proportion of population served for wastewater services in the area of coverage of the utility varies from under 10% (PNG) to 100% (American Samoa). All but two utilities serve more than 40% of the resident population. As for water, those utilities with lower coverage percentages may experience greater growth in the future as coverage spreads.

7.3 Proportion of new connections last year (%) - Water

PERFORMANCE INDICATOR CHARTS

GRAPH 3

Proportion of new connections last year (%)



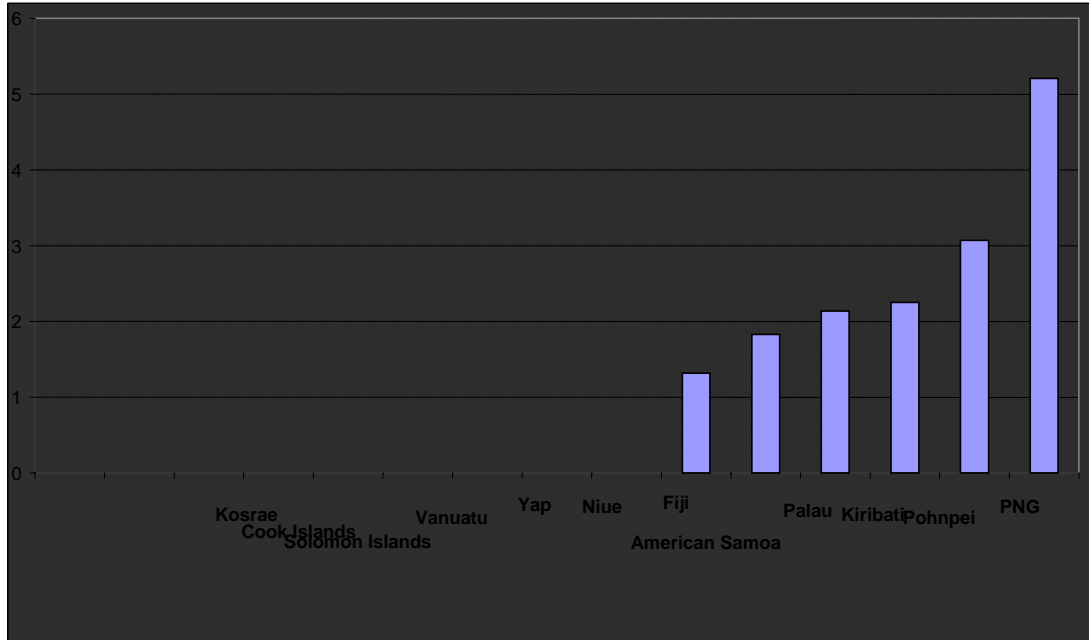
This PI represents the current growth rate of water supply services and appears to have good quality data. Niue has a very high growth rate of over 50% for last year, but the others are all fairly stable at under 11%. Graph 1 shows Niue to have a population coverage of almost 100%, so lower growth will be experienced in future years unless the resident population increases dramatically. It will also be interesting to see if Pohnpei's healthy growth rate of almost 10% continues since service coverage is still relatively low.

7.4 Proportion of new connections last year (%) - Wastewater

PERFORMANCE INDICATOR CHARTS

GRAPH 4

Proportion of new connections last year (%)



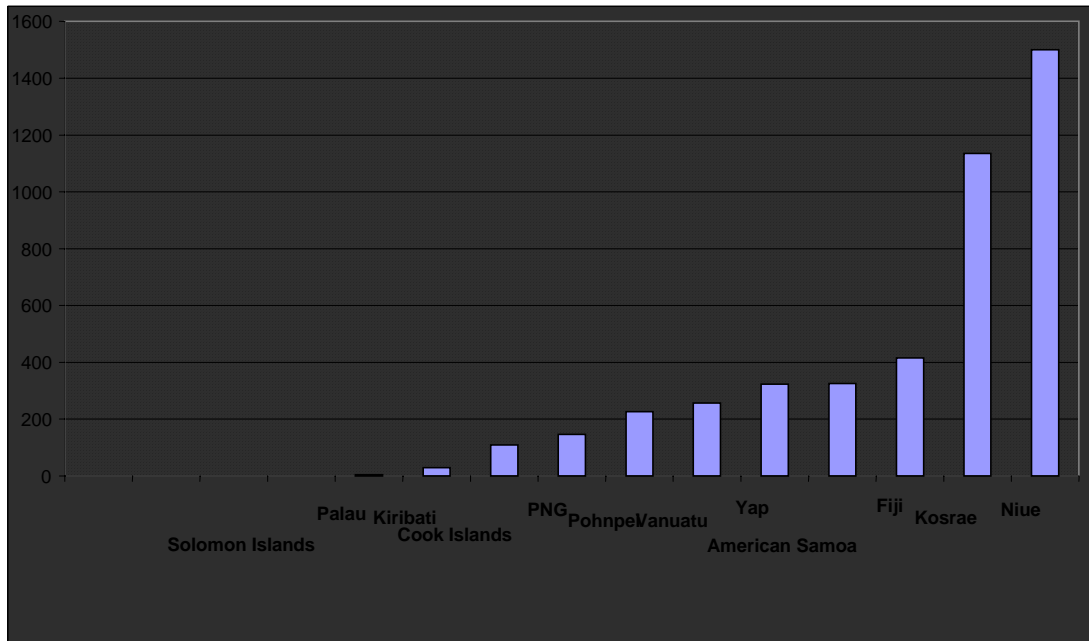
This PI represents the growth rate of wastewater collection services. All utilities are fairly stable, with no growth rate greater than 6% reported. The utilities with the highest growth rates, PNG and Pohnpei, also have the lowest population coverage (Graph 2), as expected.

7.5 Per capita consumption (l/h/d)

PERFORMANCE INDICATOR CHARTS

GRAPH 5

Per capita consumption (l/h/d)



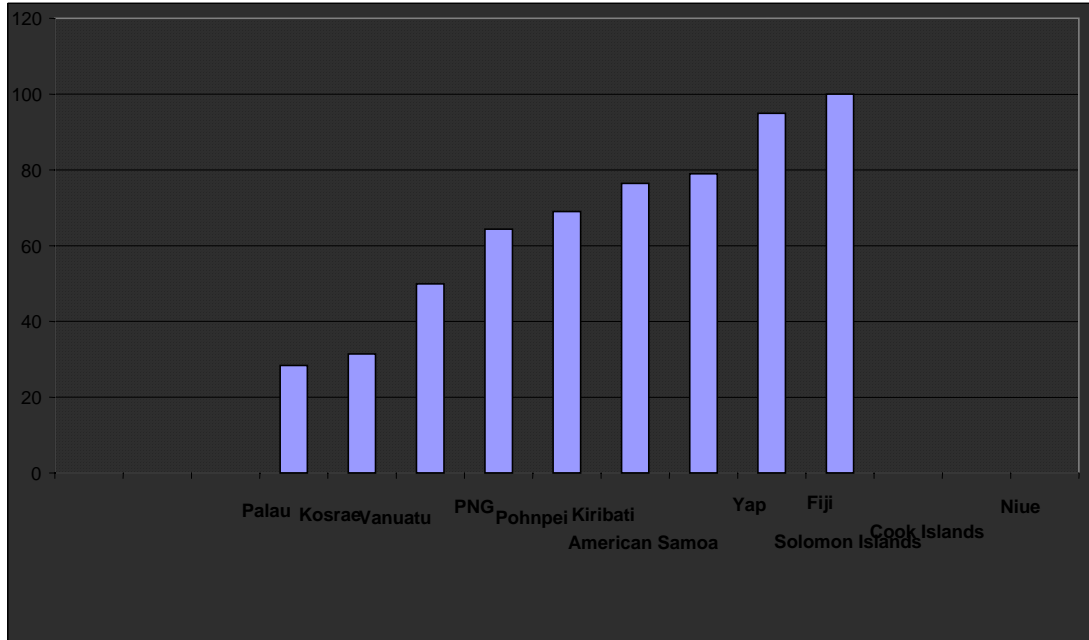
This PI represents average water usage by consumers in litres per head per day. Niue and Kosrae report exceptionally high consumption with over 1000 l/h/d, whilst Solomon Islands (0.01 l/h/d) and Palau (4.3 l/h/d) appear to be infeasibly low. Niue and Kosrae may wish to consider demand management options to reduce consumption. Kiribati's consumption is low, possibly due to the limited service provision – Graph 10 shows that 95% of the population receive service for less than 8 hours a day on average.

7.6 Proportion of treatment capacity utilised (%) - Water

PERFORMANCE INDICATOR CHARTS

GRAPH 6

Proportion of treatment capacity utilised (%)



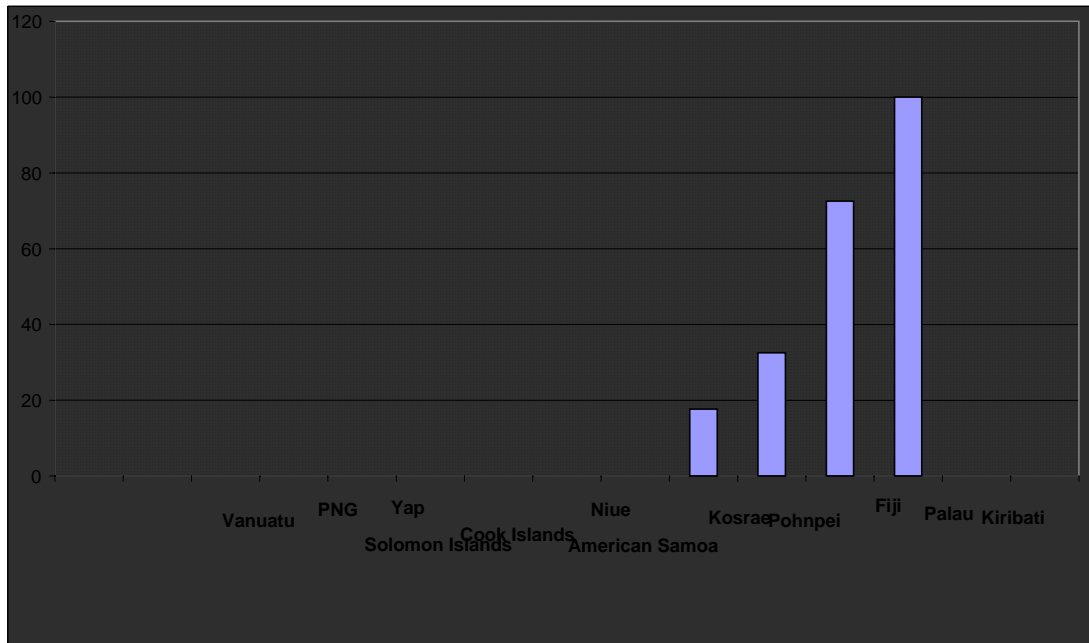
This PI represents the current degree of redundancy in the water treatment assets. Palau and Kosrae have the greatest redundancy, with utilisation of capacity at no more than about 30%. The rest lie in the range 50% to 100%, except three utilities which did not report at least one of the values required to make the calculation. Although Fiji is using all of its capacity, it may not be required to invest in extra capacity since it has a low growth rate (Graph 3). However, Yap's growth rate of over 10% combined with current asset utilisation of over 95% may mean that it will need to invest soon in additional treatment capacity.

7.7 Proportion of treatment capacity utilised (%) - Wastewater

PERFORMANCE INDICATOR CHARTS

GRAPH 7

Proportion of treatment capacity utilised (%)



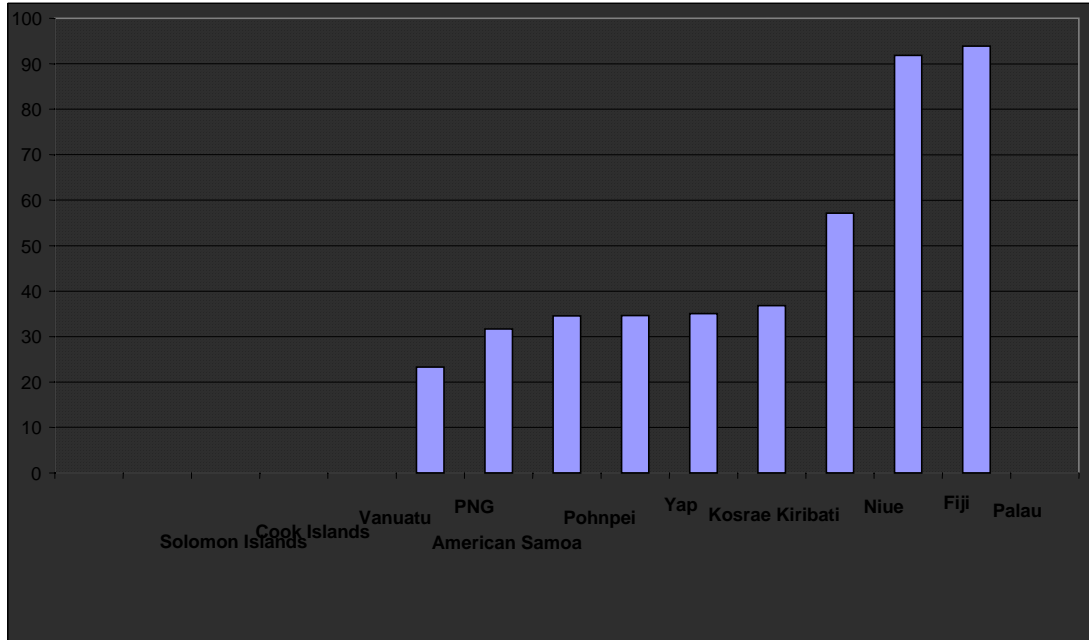
This PI represents the current degree of redundancy in the wastewater treatment assets. Values range from under 20% (American Samoa, which also has a low growth rate of under 2%) to 100% (Fiji, again, as for water). Data is presented for only four utilities - the remainder either did not report the base data required or reported a utilisation rate well in excess of 100%, which was excluded via the quality checks.

7.8 Unaccounted for water (%)

PERFORMANCE INDICATOR CHARTS

GRAPH 8

Unaccounted for water (%)



This PI is a calculation of the difference between water distributed and water used legitimately by consumers. A high percentage of unaccounted for water is considered to be inefficient and wasteful since no revenue is received for it. Niue and Fiji are outliers, both reporting over 90%. A problem with the base data is almost certainly to blame. Kiribati also reports a high figure of almost 60%. Since Kiribati also has a very low per capita consumption (Graph 5), it could be that a significant proportion of unaccounted for water is actually illegal consumption or theft. Other utilities lie in the range 23% (Vanuatu) and 37% (Kosrae). Three utilities either did not report the base data or the base data had obvious errors in such as degree of magnitude errors.

8. Conclusions

The ADB sponsored Benchmarking project has proven to be an excellent opportunity for water and wastewater utilities in the Pacific Region to share knowledge and gauge their performance amongst themselves.

However there is concern on the continuity of the program as demonstrated by the late responses of data from utilities. This is most likely due to the lack of understanding and interpretation of the questionnaires, relevance of questions, issue of proprietorship, willingness to invest in the program, funding issues. Country representatives are urged to appreciate the usefulness of the program and provide the necessary support and commitment to continue with the program. Utilities are encouraged to develop action plans to ensure data are collected in an orderly manner to facilitate the collection of data, thus ensuring continuity of the program.

Finally, continuing financial support is necessary to ensure the success of the project. This project is in any case an excellent program that requires the commitment of water utilities in the Pacific.

*Taito Delana
Pacific Water Association
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